

What is claimed is:

1. A non-contact type rotation-angle sensing device in which a rotation angle sensor having magnetoresistance elements detects a rotation angle of an object to be measured, said object to be measured being rotatable round a rotary shaft with respect to the rotation angle sensor and having a permanent magnet, wherein said permanent magnet is disposed symmetrically about said rotary shaft of said object to be measured, and a magnetic element is disposed on said object to be measured between said permanent magnet and the magnetoresistance elements.

2. The non-contact type rotation-angle sensing device according to claim 1, wherein said magnetoresistance elements are resistance elements that detect a direction of magnetic flux, and any magnetic material is not disposed on said rotation angle sensor side between said magnetoresistance elements and said object to be measured.

3. The non-contact type rotation-angle sensing device according to claim 1, wherein plural permanent magnets are used as said permanent magnet disposed symmetrically about said rotary shaft of said object to be measured, and polarity of said permanent magnets is arranged so that magnetic fluxes flow in the same direction in a magnetic circuit formed of said plural permanent magnets and said rotation angle sensor having said magnetoresistance elements.

4. The non-contact type rotation-angle sensing device according to claim 1, wherein a plate-like magnetic element is disposed along a surface of said permanent magnet of said object to be measured in the polarizing direction on said rotation angle

sensor side.

5. The non-contact type rotation-angle sensing device according to claim 4, wherein the magnetic element disposed along
5 the surface of said permanent magnet in the polarizing direction on said rotation angle sensor side is common to said plural permanent magnets, partially provided with a notch and annular.

6. A non-contact type rotation-angle sensing device in which
10 a rotation angle sensor having magnetoresistance elements detects a rotation angle of an object to be measured, said object to be measured being rotatable round a rotary shaft and having a permanent magnet with respect to the rotation angle sensor, wherein said permanent magnet is disposed symmetrically about said rotary shaft
15 of said object to be measured, and said magnetoresistance elements are disposed perpendicularly onto an extension line of said rotary shaft, and a magnetic element is disposed on said object to be measured along a magnetic flux path from said permanent magnet to said magnetoresistance elements.

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7. The non-contact type rotation-angle sensing device according to claim 6, wherein said magnetoresistance elements are resistance elements that detect a direction of magnetic flux, and any magnetic material is not disposed on said rotation angle sensor
25 side between said magnetoresistance elements and said object to be measured.

8. The non-contact type rotation-angle sensing device according to claim 6, wherein plural permanent magnets are used as
30 said permanent magnet disposed symmetrically about said rotary shaft

of said object to be measured, and polarity of said permanent magnets is arranged so that magnetic fluxes flow in the same direction in a magnetic circuit formed of said plural permanent magnets and said rotation angle sensor having said magnetoresistance elements.

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9. The non-contact type rotation-angle sensing device according to claim 6, wherein a plate-like magnetic element is disposed along a surface of said permanent magnet of said object to be measured in the polarizing direction on said rotation angle sensor side.

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10. The non-contact type rotation-angle sensing device according to claim 9, wherein the magnetic element disposed along the surface of said permanent magnet in the polarizing direction on said rotation angle sensor side is common to said plural permanent magnets, partially provided with a notch and annular.

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